REMARKS

This Amendment responds to the Office Action dated August 30, 2004. A petition and fee for a one-month extension of time are included herewith.

The Examiner objected to the drawings because Fig. 2A has two steps that have a line that do not indicate a destination. This has been corrected to show both lines going to the "Return" box. This correction is supported by the priority document. Replacement sheets are included with this amendment.

The Examiner objected to abstract for being in improper language and for being too lengthy. These objections have been addressed in the new abstract that is attached on a separate sheet.

The Examiner objected to the limitation "updating a variance based on the difference" in line 7 of claim 1. This objection is traversed. It is not necessary to list every step in a process, and is appropriate to use the term updating in this circumstance even though calculating has not been mentioned.

The Examiner rejected claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Graumann (U.S. 6,175,634) in view of Reaves et al. (WO 9602911). Claim 3 is cancelled and has been incorporated into claim 1.

Each claim limitation must be taught or suggested to establish a prima facie case of obviousness. Regarding claim 1, it states that the noise level parameter is updated as a function of "the energy of said signal within said most recent one of said samples." In contrast, Graumann discloses a Noise Density Function, (NPDF) that is used to update the noise level (NF) threshold. The passage quoted by the Examiner at Column 9, lines 7-21, relates to making a determination regarding the presence of speech based on a comparison of input signal energy

to the noise floor (NF), but is utterly silent as to updating of the noise floor parameter. Thus, this limitation is not taught by Graumann. Furthermore, Reaves is completely silent as to this limitation of the claim. Thus, this limitation is not taught by the references.

Claim 1 also states that "in any event that said noise level parameter exceeds the energy of said signal within said most recent one of said sample windows then setting said noise level parameter to equal the energy of said signal within said most recent one of said sample windows." Thus, according to claim 1, in the event the noise level parameter is higher than the energy in the most recent sample, the noise level is biased downwardly. Graumann does not disclose this aspect of the invention. The passage in Graumann quoted by the Examiner relates to updating the NPDF (Step 705) based on a determination that only noise is present in the input signal. Graumann does not teach or suggest that the noise parameter be set "to equal the energy of said signal within said most recent one of said sample windows."

Furthermore, regarding the newly amended part of claim 1 (which is an incorporation of cancelled claim 3), Graumann discloses using attack and decay rates for updating/calculating a signal E_{FOL}. This signal is different from the standard deviation parameter of Graumann and not the least suggestive of Applicant's claimed variance parameter. The E_{FOL} signal is used in Graumann to "determine a logarithmic attenuation value," and has no bearing whatsoever on amended claim 1.

Furthermore, regarding claim 1, there must be some suggestion or motivation to combine the two references to establish a prima facie case of obviousness, and there must be a reasonable expectation of success. Additionally, the proposed modification cannot change the principle of operation of the reference. It is evident from Reaves that the variance is calculated in the frequency domain from a smoothed frequency band limited energy and is used to detect the

beginning and end points of speech. Graumann, on the other hand, calculates the variance in the time domain and compares the standard deviation with a threshold (Fig. 12) to decide if a signal is noise or speech. Moreover, it would not be possible to combine the teachings of Graumann and Reaves since the frequency domain calculations of Reaves cannot be applied to the time domain methodology of Graumann.

The motivation or suggestion to combine that is necessary for a prima facie case of obviousness is also lacking. Reaves teaches away from Graumann by using a calculated variance to detect the inset of a speech signal, rather than detecting between noise and speech. Furthermore, as discussed, Graumann does not disclose the "updating a variance parameter based on said difference" limitation of amended claim 1. The teachings of Reaves cannot be properly combined with Graumann because Reaves teaches away and the resulting combination would not work.

Claims 2, and 4 are dependent on claim 1, and thus are also non-obvious for the same reasons that claim 1 is non-obvious. Claim 3 has been canceled.

For the foregoing reasons, retraction of the Examiner's rejection of the claims is respectfully requested. It is believed that the application, as now presented, is in condition for allowance.

Respectfully submitted,

JONES DAY

David B. Cochran
(Reg. No. 39,142)

Jones Day
North Point, 901 Lakeside Avenue
Cleveland, Ohio 44114
(216) 586-7506